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Letter: Dosing ewes at lambing time

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With lambing now under way in many regions of the UK, farmers' minds should already be focusing on worm control in both their ewes and lambs for the forthcoming grazing season. This letter serves as a reminder to vets and advisers who should already have established farm health plans for the coming year and have discussed a worm control plan with their clients. Of immediate concern is what to advise on choice of anthelmintic and when and how frequently to treat ewes during or after lambing. With the emergence of anthelmintic-resistant (AR) nematode strains and the increasing reliance placed on anthelmintics for their control, the continued effectiveness of some of the more traditional worm control strategies has been questioned (Taylor and others 2009) and may influence recommendations on both product choice and application.

Dosing of ewes at turnout to pasture is common practice on most sheep farms, with the objective of controlling pasture contamination from the periparturient rise (PPR) in egg output. It is well established that there is a relaxation in immunity in adult ewes from two to four weeks prelambling which persists for six to eight weeks postlambling (eg, Kelly 1973, Michel 1985). As ewe lactation starts, adult worms are not expelled and produce more eggs; fewer incoming infective larvae are rejected; and hypobiotic larvae resume development as a consequence of which worm numbers increase and there is a rise in nematode faecal egg count (FEC). As lactation ceases, ewes recover their immunity and worm numbers and FECs tend to fall back towards their prelambling levels. Several factors are known to influence the PPR. For example, it is less marked in single-bearing ewes than multiple-bearing ewes, and it can be diminished by dietary protein supplementation.

One of the growing concerns is that treatment during the PPR may have serious consequences for the selection for AR strains, such that the timing of dosing linked to the choice of wormer are both important. If ewes are still experiencing the PPR when the effect of anthelmintic dosing ceases, they are likely to become reinfected quickly, particularly on permanent pastures that are heavily infective. Under these conditions, selection for AR is minimal but the benefit of treatment in terms of pasture contamination is also minimal. Therefore, ewes that are treated early in the PPR with short-acting drugs show only a short duration of reduced egg output before resuming the expected, but delayed, PPR in FEC. As a

consequence, repeated or long-acting or persistent anthelmintic treatments have been advocated in order to eliminate the rise in FEC altogether. This strategy should aim to reduce pasture infectivity for the lambs later in the season while also ensuring that the end of the PPR coincides with the period of anthelmintic activity. However, with sustained treatments there may be a prolonged period before ewes re-establish a nematode infection from the in refugia population, which can be highly selective for AR worms.

As a consequence of these observations and concerns, guidelines were developed leading to the current Sustainable Control of Parasites in Sheep (SCOPS) guidelines (Abbott and others 2012). The guidelines draw on data from more recent controlled experiments, as well as field-derived knowledge. The recommended strategy for ewe treatments is, therefore, a compromise between reduction in pasture larval contamination for the subsequent grazing lambs and avoiding high selection pressure for AR. SCOPS recommends two possible options: leave a proportion of the ewes untreated or treat early in the postlambing phase to ensure that ewes become reinfected with unselected parasites before their immunity is fully restored.

Both these approaches increase the risk of parasitic disease for lambs grazing the pastures later in the season so careful planning is necessary to develop strategies that give acceptable levels of worm control without undue selection for AR. There are also no hard and fast guidelines as to how many ewes to leave untreated. It has been suggested that leaving about 10 per cent of the flock untreated will be sufficient to provide a large enough dilution effect to delay selection for AR strains. This can be achieved by leaving single-bearing ewes and/or a proportion of ewes in good body condition untreated. Careful consideration has also to be given when using long-acting formulations of moxidectin that provide persistent action and long periods of protection against some species of nematodes for up to several months. Wherever possible, the recommendation is to use these products before lambing or early in the PPR.

Further information can be found on the SCOPS (www.scops.org.uk) or NADIS (www.nadis.org.uk) websites. The NADIS site contains up-to-date parasite forecasts and recommendations for control based on anticipated parasite disease risks.

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